

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) An apparatus for producing hydrogen by a steam reforming reaction, on a catalyst, of a hydrocarbon or an oxygen-containing hydrocarbon as a raw material, comprising:

a hydrogen separation type reformer which has a means for heating the catalyst and which has a hydrogen separation membrane built into a layer of the catalyst for selectively separating hydrogen;

a cooling means for cooling high temperature high purity hydrogen obtained from the reformer; and

hydrogen charge/discharge means disposed downstream from the cooling means and composed of a hydrogen storage material,

wherein:

the cooling means for cooling the high temperature high purity hydrogen comprises an indirect heat exchanger,

wherein:

the hydrogen charge/discharge means composed of the hydrogen storage material comprises at least two members of a hydrogen storing alloy incorporating a heating/cooling means, and

wherein:

a fluid for cooling the high temperature high purity hydrogen via the indirect heat exchanger is cooling water; and

hot water heated by heat exchange performed by the heat exchanger is used for heating of a hydrogen delivery means in the hydrogen charge/discharge means composed of the hydrogen storage material.

Claims 2-6 (canceled).

7. (previously presented) The apparatus for producing hydrogen as claimed in claim 1, wherein:

a pressure regulating means is interposed between the cooling means for cooling the high temperature high purity hydrogen and the hydrogen charge/discharge means disposed downstream from the cooling means and composed of the hydrogen storage material, to regulate the pressure of the high purity hydrogen to be fed to the hydrogen charge/discharge means.

Claims 8-17 (canceled).